

Amdt. Dated September 15, 2005
Reply to Office Action of July 18, 2005

Customer No.: 27405

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Canceled)
2. (Currently amended) The system, as set forth in claim [[1]] 6, comprising:
an evaluation device positioned to examine the bubbles in the flow material passing through the conduit.
3. (Currently amended) The system, as set forth in claim [[1]] 6, wherein the pump comprises a peristaltic pump.
4. (Currently amended) The system, as set forth in claim [[1]] 6, wherein the pump is capable of pumping the flow material through the conduit at a plurality of flow rates.
5. (Canceled)
6. (Currently amended) ~~The A system, as set forth in claim 5 for evaluating or calibrating a bubble detector, comprising:~~
a conduit adapted to pass a flow material therethrough, wherein the conduit is configured for passing flow materials of different viscosities;
a pump operatively coupled to the conduit to pump the flow material through the conduit;
a bubble-forming device operatively coupled to the conduit, the bubble-forming device being adapted to introduce bubbles into the flow material passing through the conduit; and
a bubble detector to be evaluated positioned to examine the bubbles in the flow material passing through the conduit,
wherein the bubble-forming device comprises:
a connecting device operatively coupled to the conduit;
a bubble-forming capillary adapted to be positioned within the connecting device in communication with the flow material passing through the conduit; and

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a bubble-pumping device operatively coupled to the bubble-forming capillary, the bubble-pumping device adapted to deliver a bubble-forming material to the flow material in the conduit through the bubble-forming capillary to create bubbles in the flow material,

wherein the capillary comprises:

a proximal portion operatively coupled to the bubble-pumping device and a distal portion slidably positioned within the connecting device,

7. (Currently amended) ~~The A system, as set forth in claim 5~~ for evaluating or calibrating a bubble detector, comprising:

a conduit adapted to pass a flow material therethrough, wherein the conduit is configured for passing flow materials of different viscosities;

a pump operatively coupled to the conduit to pump the flow material through the conduit;

a bubble-forming device operatively coupled to the conduit, the bubble-forming device being adapted to introduce bubbles into the flow material passing through the conduit; and

a bubble detector to be evaluated positioned to examine the bubbles in the flow material passing through the conduit,

wherein the bubble-forming device comprises:

a connecting device operatively coupled to the conduit;

a bubble-forming capillary adapted to be positioned within the connecting device in communication with the flow material passing through the conduit; and

a bubble-pumping device operatively coupled to the bubble-forming capillary, the bubble-pumping device adapted to deliver a bubble-forming material to the flow material in the conduit through the bubble-forming capillary to create bubbles in the flow material,

wherein the bubble-pumping device comprises a syringe.

8. (Currently amended) The system, as set forth in claim [[5]] 6, wherein the bubble-pumping device is adapted to deliver the bubble-forming material at a plurality of bubble flow rates and sizes.

9. (Currently amended) The system, as set forth in claim [[1]] 6, comprising:

a pulse dampener operatively coupled the conduit between the pump and the bubble-forming device.

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10. (Currently amended) The system, as set forth in claim [[1]] 6, wherein the flow material comprises a surfactant.

11. (Original) The system, as set forth in claim 2, wherein the evaluation device comprises:

a previously evaluated bubble detector having a known bubble detection resolution.

12. (Original) The system, as set forth in claim 2, wherein the evaluation device comprises:

an inspection device adapted to record bubbles formed by the bubble-forming device.

13. (Previously presented) The system, as set forth in claim 12, wherein the inspection device comprises a camera operatively positioned proximate the bubble-forming device.

14-15. (Canceled)

16. (Currently amended) The A method of evaluating or calibrating a bubble detector comprising the acts of: ~~as set forth in claim 15~~

(a) pumping a flow material through a conduit, wherein the conduit is configured for passing flow materials of different viscosities;

(b) introducing bubbles into the flow material;

(c) examining the bubbles in the flow material with a bubble detector under evaluation; and

(d) detecting the bubbles in the flow material

wherein act (b) comprises the act of:

using a capillary to inject bubbles into the flow material,

wherein the act of using a capillary comprises the act of:

slidably positioning the capillary within the flow material to adjust the size of the bubbles.

17. (Currently amended) The method, as set forth in claim [[15]] 16, wherein the act of using a capillary comprises the act of:

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pumping a bubble-forming material through the capillary and into the flow material.

18. (Currently amended) The method, as set forth in claim ~~[[14]]~~ 16, wherein act (b) comprises the act of:

introducing a gas into the flow material to create the bubbles.

19. (Currently amended) The method, as set forth in claim ~~[[14]]~~ 16, comprising the act of:

mitigating pressure oscillations within the flow material.

20. (Currently amended) The method, as set forth in claim ~~[[14]]~~ 16, wherein act (c) comprises the act of:

using an ultrasonic probe to examine the bubbles in the flow material at a plurality of ultrasonic signal levels.

21. (Currently amended) The method, as set forth in claim ~~[[14]]~~ 16, wherein act (d) comprises the act of:

detecting the bubbles by visual inspection.

22. (Currently amended) The method, as set forth in claim ~~[[14]]~~ 16, wherein act (d) comprises the act of:

detecting the bubbles using a bubble detector having a known bubble detection resolution.

23. (Currently amended) The method, as set forth in claim ~~[[14]]~~ 16, comprising the act of:

comparing the examination of the bubbles in the flow material with the bubble detector with the detection of the bubbles in the flow material to calibrate the bubble detector.

24. (Original) The method of claim 23, comprising the acts of:

(a) calculating a calibration factor from the examination of the bubbles in the flow material with the bubble detector and the detection of the bubbles in the flow material; and

(b) applying the calibration factor to the bubble detector to calibrate the bubble detector.

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25. (Currently amended) The method, as set forth in claim [[14]] 16, wherein act (a) comprises the act of:

pumping the flow material in the conduit at a plurality of flow rates.

26. (Currently amended) The method, as set forth in claim [[14]] 16, wherein act (b) comprises the act of:

altering the size of the bubbles.

27. (Currently amended) The method, as set forth in claim [[14]] 16, wherein act (b) comprises the act of:

altering a formation rate of the bubbles.

28. (Original) The method, as set forth in claim 24, wherein act (b) comprises the act of:

programming the calibration factor into a memory of the bubble detector.

29-60. (Canceled)